

EXHIBIT J

Curriculum Vitae
Lorin Moultrie Hitt

Zhang Jindong Professor
Operations, Information and Decisions Department
University of Pennsylvania, Wharton School
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Philadelphia, PA 19104
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Educational History

Massachusetts Institute of Technology	Ph.D. Management (1996) Concentration in Information Technology and Economics Dissertation Title: "Economic Analysis of Information Technology and Organization" Committee: Erik Brynjolfsson (MIT, chair), Zvi Griliches (Harvard), Thomas W. Malone (MIT)
Brown University	M.S. Electrical Engineering (1989)
Brown University	Sc.B. Electrical Engineering with Honors, Magna Cum Laude (1988)

Employment History

University of Pennsylvania, Wharton School, Philadelphia, PA. *Zhang Jindong Professor, Operations, Information and Decisions Department (formerly OPIM)* (2015-present).

University of Pennsylvania, Wharton School, Philadelphia, PA. *Dean's Chair Professor, Department of Operations and Information Management* (2014-2015).

University of Pennsylvania, Wharton School, Philadelphia, PA. *Professor of Operations and Information Management, Department of Operations and Information Management* (2013-2014).

University of Pennsylvania, Wharton School, Philadelphia, PA. *Class of 1942 Professor (Term Chair), Department of Operations and Information Management* (2008-2013).

University of Pennsylvania, Wharton School, Philadelphia, PA. *Alberto Vitale Term Associate Professor of Operations and Information Management* (2002-2008).

University of Pennsylvania, Wharton School, Philadelphia, PA. *Alberto Vitale Term Assistant Professor of Operations and Information Management* (2000-2002).

University of Pennsylvania, Wharton School, Philadelphia, PA. *Assistant Professor of Operations and Information Management* (1996-2000).

Massachusetts Institute of Technology, Industrial Performance Center, Cambridge, MA.

Graduate Fellow (1995-1996).

Massachusetts Institute of Technology, Center for Coordination Science, Cambridge, MA.
Research Assistant (1992-1996).

Brown University, Department of Engineering, Providence, RI and IBM T.J. Watson Research Center, Yorktown Heights, NY. *Graduate Research Assistant (1988-89).*

Brown University, Department of Engineering, Providence, RI. *Research Assistant (1987-88).*

Oliver Wyman and Company, New York, NY. *Consultant (1989-1992).*

Harry Diamond Laboratories, Adelphi, MD. *Engineering Technician (1984-87).*

Articles Published in Refereed Journals

1. Wu, Lynn, Hitt, Lorin M. and Bowen Lou (2020). “Data Analytics Skills, Innovation and Firm Productivity,” *Management Science* 66(5): 1783-2290.
2. Wu, Lynn, Hitt, Lorin M. and Bowen Lou (2019). “Data Analytics Supports Decentralized Innovation Communities,” *Management Science* 65(10): 4451-4949.
3. Bavafa, Hessam and Hitt, Lorin M. and Terwiesch, Christian (2018), “The Impact of E-Visits on Visit Frequencies and Patient Health: Evidence from Primary Care,” *Management Science* 64(12): 5461-5959.
4. Tan, Fangyun, Netessine, Sergei and Lorin M. Hitt (2017). “Is Tom Cruise Threatened? An Empirical Study of the Impact of Product Variety on Demand Concentration,” *Information Systems Research* 28(3): 643-660.
5. Avgar, Ariel, Tambe, Prasanna and Lorin M. Hitt (2018). “Built to Learn: How Work Practices Affect Employee Learning During Healthcare Information Technology Implementation,” *MIS Quarterly* 42(2): 645-659 (a previous version appeared as “The Effects of Organizational Factors on Healthcare IT Adoption Costs: Evidence from New York Nursing Homes,” *Proceedings of the 2009 Hawaii International Conference on Systems Sciences: HICSS-43.*).
6. Wu, Lynn, Jin, Fujie and Lorin M. Hitt (2018). “Are All Spillovers Created Equal? A Network Perspective on IT Labor Movement,” *Management Science* 64(7): 2973-3468. (A previous version appeared as: Wu, Lynn, Jin, Fujie and Lorin M. Hitt (2014). “Are All Spillovers Created Equal? A Network Perspective on IT Labor Movements,” *Proceedings of the 33rd Annual International Conference on Information Systems.*)
7. Hitt, Lorin M. and Prasanna Tambe (2016). “Health Care Information Technology, Work Organization and Nursing Home Performance,” *ILR Review* (69): 834-859.
8. Tambe, Prasanna and Lorin M. Hitt (2014). “Measuring Information Technology Spillovers,” *Information Systems Research* 25(1):53-71. (A previous version appeared as: Hitt, Lorin M. and Sonny Tambe (2006). “Measuring Spillovers from Information Technology Investments,” *Proceedings of the 25th Annual International Conference on Information Systems*)

9. Tambe, Prasanna and Lorin M. Hitt (2014). "Job Hopping, Information Technology Spillovers and Productivity Growth," *Management Science* 60(2): 338-355. (A previous version appeared as: Tambe, Sonny and Lorin M. Hitt (2010). "Job Hopping, Knowledge Spillovers, and Regional Returns to Information Technology Investments," *Proceedings of the 29th Annual International Conference on Information Systems*.) (Finalist, Management Science Best Paper Award IS Area, 2015; Winner Management Science Best Paper Award IS Area, 2016).
10. Wu, D.J., Ding, Ming, and Lorin M. Hitt (2013). "IT Implementation Contract Design: Analytical and Experimental Investigation of IT Value, Learning and Contract Structure," *Information Systems Research* 24(3). 787-801 (A previous version appeared as: Wu, D.J., Ding, Min and Lorin M. Hitt (2003). "Learning in ERP Contracting: A Principal-Agent Analysis," *Proceedings of the 37th Annual Hawaii International Conference on System Sciences*, Honolulu, HI.)
11. Gao, Gordon and Lorin M. Hitt (2012) "IT and Trademarks: Implications for Product Variety" *Management Science* 58(6): 1211-1226. [A previous version appeared as: Gao, Gordon and Lorin M. Hitt (2004). "IT and Product Variety: Evidence from Panel Data," *Proceedings of the 25th Annual International Conference on Information Systems*, Washington, D.C. (Runner-up – Best Paper Award)]
12. Tambe, Prasanna and Lorin M. Hitt (2012). "Information Technology and Productivity 1987-2006: Evidence from New Firm-Level Data," *Information Systems Research* 23(9):599-617. (Winner of the ISR 2013 Best Paper Award).
13. Field, Joy, Xue, Mei and Lorin M. Hitt (2012) "Learning by customers as co-producers in financial services: An empirical study of the effects of learning channels and customer characteristics," *Operations Management Research* 4(1-2), June: 43-56.
14. Tambe, Prasanna and Lorin M. Hitt (2012). "Now IT's Personal: Offshoring and the Shifting Skill Composition of the US Information Technology Workforce," *Management Science* 58(4): 678-695. [A previous version appeared as: Tambe, Sonny and Lorin M. Hitt (2010). "Now IT's Personal: Offshoring and the Shifting Skill Composition of the US Information Technology Workforce," *Proceedings of the 29th Annual International Conference on Information Systems*] (Finalist, Management Science Best Paper Award IS Area, 2014).
15. Tambe, Prasanna, Hitt, Lorin M. and Erik Brynjolfsson (2012). "The Extroverted Firm: How External Information Practices Affect Productivity," *Management Science* 58(5): 843-859. [A prior version appeared as: Tambe, Sonny, Hitt, Lorin M. and Erik Brynjolfsson (2008). "The Extroverted Firm," *Proceedings of the 27th Annual International Conference on Information Systems*] (Runner-Up, INFORMS Times Best Paper Award, 2017)
16. Li, Xinxin, Hitt, Lorin M. and Z. John Zhang (2011). "Product Reviews and Competition in Markets for Repeat Purchase Products," *Journal of Management Information Systems* 27(4): 9-42.
17. Hitt, Lorin M, Xue, Mei, and Pei-Yu Chen (2011). "The Determinants and Outcomes of Internet Banking Adoption," *Management Science* 57(2): 291-307.
18. Li, Xinxin and Lorin M. Hitt (2010). "Price Effects in Online Product Reviews: An Analytical Model and Empirical Analysis," *MIS Quarterly* 34(4): 809-831.
19. Tambe, Prasanna and Lorin M. Hitt (2010). "How Does Offshoring Affect IT Workers?" *Communications of the ACM* 53(10): 72-82.

APPENDIX A

20. Li, Xinxin and Lorin M. Hitt (2008). "Self Selection and the Information Role of Product Reviews," *Information Systems Research* 19(4): 456-474.
21. Wu, Shin-Yi, Hitt, Lorin, Chen, Pei-Yu, and G. Anandalingam (2008) "Customized Bundle Pricing for Information Goods: A Nonlinear Mixed Integer Programming Approach," *Management Science* 54(3): 608-622.
22. Hitt, Lorin M. and Sonny Tambe (2007) "Broadband Adoption and Content Consumption," *Information Economics and Policy* 19(3-4): 362-378.
23. Xue, Mei, Hitt, Lorin M. and Patrick T. Harker (2007). "Customer Efficiency, Channel Usage and Firm Performance in Retail Banking," *Manufacturing and Service Operations Management* (9): 535-558.
24. Eric K. Clemons, Gao, Gordon and Lorin M. Hitt (2006). "When Online Reviews Meet Hyperdifferentiation: A Study of the Craft Beer Industry," *Journal of Management Information Systems* 23(2): 149-171 (a previous version appeared in the *Proceedings of the 37th Annual Hawaii International Conference on System Sciences*, Honolulu, HI).
25. Jacobides, Michael G. and Lorin M. Hitt (2005). "Vertical Scope, Revisited: Transaction Costs vs. Capabilities and Profit Opportunities in Mortgage Banking," *Strategic Management Journal* 26(13): 1209-1227.
26. Hitt, Lorin M. and Pei-Yu Chen (2005). "Bundling with Customer Self-Selection: A Simple Approach to Bundling Low Marginal Cost Goods," *Management Science* 51(10): 1481-1493.
27. Clemons, Eric K. and Lorin M. Hitt (2004). "Poaching and the Misappropriation of Information: Transaction Risks of Information Exchange," *Journal of Management Information Systems* 21(2): 87-108. [An earlier version appeared as: Clemons, Eric K. and Lorin M. Hitt (2003). "Poaching and the Misappropriation of Information: Transaction Risks of Information Exchange," *Proceedings of the 37th Annual Hawaii International Conference on System Sciences*, Honolulu, HI.]
28. Snir, Eli and Lorin M. Hitt (2004). "Vendor Screening in Information Technology Contracting with a Pilot Project," *Journal of Organizational Computing and Electronic Commerce* 14(1): 61-88. [An earlier version of this paper appeared as Snir, Eli and Lorin M. Hitt (1999), "Vendor Screening in IT Contracting with a Pilot Project (extended abstract)," *Proceedings of the 20th Annual International Conference on Information Systems*, Charlotte, N.C.: 324-327. (Runner-up for Best Paper Award).]
29. Snir, Eli and Lorin M. Hitt (2003). "Costly Bidding in Online Markets for IT Services," *Management Science* 49(11): 1504-1520.
30. Brynjolfsson, Erik and Lorin M. Hitt (2003) "Computing Productivity: Firm-Level Evidence," *Review of Economics and Statistics* 85(4): 793-808.
31. Brynjolfsson, Erik, Hitt, Lorin M. and Shinkyu Yang (2002) "Intangible Assets: Computers and Organizational Capital," *Brookings Papers on Economic Activity* (1): 137-199. [An earlier version of this paper appeared as Brynjolfsson, Erik, Hitt, Lorin M. and Shinkyu Yang (1998) "Intangible Assets: How the Interaction of Computers and Organizational Structure Affects Stock Market Valuations", *Proceedings of the 19th Annual International Conference on Information Systems*, Helsinki, Finland: 8-29].
32. Chen, Pei-Yu and Lorin M. Hitt (2002) "Measuring Switching Costs and Their Determinants in Internet Enabled Businesses: A Study of the Online Brokerage Industry," *Information Systems Research* 13(3): 255-276. [An earlier version of this paper appeared as Chen, Pei-Yu and Lorin M. Hitt (2000) "Switching Cost and Brand Loyalty in Electronic Markets:

Evidence from On-Line Retail Brokers," 21st Annual International Conference on Information Systems, Brisbane, Australia: 134-144.]

33. Hitt, Lorin M., Wu, D.J. and Xiaoge Zhou (2002). "Investment in Enterprise Resource Planning: Business Impact and Productivity Measures," *Journal of Management Information Systems* (Special Issue on ERP) 19(1): 71-98.
34. Hitt, Lorin M. and Frances X. Frei (2002). "Do Better Customers Utilize Electronic Distribution Channels? The Case of PC Banking," *Management Science* 48(6, June): 732-749.
35. Clemons, Eric K., Hann, Il-Horn, and Lorin M. Hitt (2002). "Price Dispersion and Differentiation in Online Travel: An Empirical Investigation," *Management Science* 48(4, April): 534-550.
36. Bresnahan, Timothy, Brynjolfsson, Erik and Lorin M. Hitt (2002). "Information Technology, Workplace Organization and the Demand for Skilled Labor: Firm-level Evidence," *Quarterly Journal of Economics*, 117(1): 339-376. [Reprinted as "Technología de la Información, Organización del Lugar de Trabajo y Demanda de Trabajadores Calificados: Evidencia a Partir de Datos de Empresa," Chapter 8 in *Reformas Y Equidad Social En America Latina Y El Caribe* (Carlos Eduardo Velez and Pax Castillo-Ruiz, eds.) Banco Interamericano de Desarrollo: 135-168 (2004). An earlier version of this paper appeared as Bresnahan, Timothy, Brynjolfsson, Erik and Lorin M. Hitt (2000) "Technology, Organization and the Demand for Skilled Labor," Chapter 5 in *The New Relationship: Human Capital in the American Corporation* (Margaret M. Blair and Thomas A. Kochan, eds.), Brookings Institution Press: 145-193.]
37. Clemons, Eric K., Hitt, Lorin M., Gu, Bin, Thatcher, Matt E. and Bruce W. Weber (2002). "Impacts of eCommerce and Enhanced Information Endowments on Financial Services: A Quantitative Analysis of Transparency, Differential Pricing and Disintermediation," *Journal of Financial Services Research* 22(1,2): 73-90.
38. Brynjolfsson, Erik and Lorin M. Hitt (2000). "Beyond Computation: Information Technology, Organizational Transformation and Business Performance." *Journal of Economic Perspectives*, 14(4): 23-48. [Reprinted as Brynjolfsson, Erik and Lorin M. Hitt (2004). "Information Technology, Organizational Transformation and Business Performance," Chapter 2 in *Productivity, Inequality and the Digital Economy* (Nathalie Greenan, Yannick L'Horty and Jacques Mairesse, eds.), MIT Press: 55-91. Also reprinted as Chapter 4 in *Inventing Organizations of the 21st Century* (Thomas Malone, Robert Laubacher and Michael S. Scott Morton, eds): 70-99.]
39. Hitt, Lorin M. (1999). "Information Technology and Firm Boundaries: Evidence from Panel Data," *Information Systems Research*, 10(2, June): 134-149.
40. Brynjolfsson, Erik and Lorin M. Hitt (1998). "Beyond the Productivity Paradox," *Communications of the ACM*, 41(8): 49-55.
41. Hitt, Lorin M. and Erik Brynjolfsson (1997). "Information Technology and Internal Firm Organization: An Exploratory Analysis," *Journal of Management Information Systems* 14 (2): 81-101.
42. Brynjolfsson, Erik and Lorin M. Hitt (1996). "Paradox Lost? Firm-Level Evidence on the Returns to Information Systems," *Management Science* 42 (4): 541-558. [reprinted as Section 1 Chapter 1 in *Beyond the IT Productivity Paradox*, (Leslie Willcocks and Stephanie Lester, eds.), John Wiley and Sons: 39-68 (1999) and Section 2 Chapter 1 in *Exploring Information Systems Research Approaches*, (Robert D. Galliers, M. Lynne Markus and Sue

Newell, eds.), Routledge: 109-127 (2007). An earlier version of this paper appeared as Brynjolfsson, Erik and Lorin M. Hitt (1993) "Is Information Systems Spending Productive? New Evidence and New Results," *Proceedings of the 14th Annual International Conference on Information Systems*, Orlando, FL. December: 47-64.]. Winner of the Best Paper Award in Information Systems Economics in last seven years (1999 Workshop on Information Systems and Economics).

43. Hitt, Lorin M. and Erik Brynjolfsson (1996). "Productivity, Business Profitability, and Consumer Surplus: Three Different Measures of Information Technology Value," *MIS Quarterly* 20(2): 121-142. Winner of 1996 Best Paper award. [An earlier version of this paper appeared as Hitt, Lorin M. and Erik Brynjolfsson (1994) "The Three Faces of IT Value: Theory and Evidence," *Proceedings of the 15th Annual International Conference on Information Systems*, Vancouver, B.C., December. (Winner of Best Paper and Best Paper Addressing Conference Theme Awards): 263-277.]

44. Brynjolfsson, Erik and Lorin M. Hitt (1995) "Information Technology as a Factor of Production: The Role of Differences Among Firms", *Economics of Innovation and New Technology* 3-4: 183-199.

45. Martin, Suzanne, Hitt, Lorin M., and James Rosenberg (1989) "p-Channel Germanium MOSFETs with High Channel Mobility," *IEEE Electron Device Letters* 10(7, July): 325-326.

Refereed Conference Proceedings (Not otherwise published in Journals)

46. Wu, Lynn, Jin, Fujie and Lorin M. Hitt (2015). "How Do Data Skills Affect Firm Productivity: Evidence from Process-driven vs. Innovation-driven Practices," *Proceedings of the 34th Annual International Conference on Information Systems*.

47. Wu, Lynn, Jin, Fujie and Lorin M. Hitt (2015). "Data Skills and the Value of Social Media: Evidence from Large-Sample Firm Value Analysis," *Proceedings of the 34th Annual International Conference on Information Systems*. (Updated version: SSRN 2826115)

48. Hong, Yili, Chen, Pei-Yu, and Lorin M. Hitt (2012). "Measuring Product Type with Dynamics of Online Review Variance: Implications for Research and Practice," *Proceedings of the 31st Annual International Conference on Information Systems* (runner-up best paper award). (Updated version: SSRN 2422686) (Conditionally accepted, *Information Systems Research*, 2020)

49. Tambe, Sonny, Hitt, Lorin M. and Erik Brynjolfsson (2011) "The Price and Quantity of IT-Related Intangible Capital," *Proceedings of the 30th Annual International Conference on Information Systems*.

50. Gao, Gordon and Lorin M. Hitt (2003). "The Economics of Telecommuting: Theory and Evidence," *Proceedings of the 24th Annual International Conference on Information Systems*, Seattle, WA.

51. Chen, Pei-Yu and Lorin M. Hitt (2001) "Brand Awareness and Price Dispersion in Electronic Markets," *22nd Annual International Conference on Information Systems*, New Orleans, LA.

52. Gu, Bin and Lorin M. Hitt (2001) "Transactions Costs and Market Efficiency," *22nd Annual International Conference on Information Systems*, New Orleans, LA.

Other Publications

Chapters in Books

53. Chen, Pei-Yu and Lorin M. Hitt (2007). "Information Technology and Switching Costs," in T. Hendershott, ed., *Handbook of Information Systems Economics*.
54. Brynjolfsson, Erik and Lorin M. Hitt (2005) "Intangible but not Unmeasurable: Some Thoughts on the Measure and Magnitude of Intangible Assets," in Carol Corrado and Daniel Sichel, eds., *Measuring Capital in the New Economy*, University of Chicago Press (for NBER).
55. Brynjolfsson, Erik and Lorin M. Hitt (2005) "Intangible Assets and the Economic Impact of Computers," in William Dutton, Brian Kahin, Ramon O'Callaghan, and Andrew Wyckoff, eds., *Transforming Enterprise*, MIT Press.
56. Clemons, Eric K., Hitt, Lorin M. and David C. Croson (2001) "The Future of Retail Financial Services: Transparency, Bypass and Differential Pricing," Chapter 4 in *Tracking a Transformation: E-commerce and the Terms of Competition in Industries* (J. Zysman, ed.), Brookings Institution Press: 92-111.
57. Clemons, Eric K. and Lorin M. Hitt (2001) "Financial Services: Transparency, Differential Pricing and Disintermediation," Chapter 4 in *The Economic Payoff from the Internet Revolution* (R. Litan and A. Rivlin, eds.), Brookings Institution Press: 87-128.
58. Hitt, Lorin M., Frei, Frances X. and Patrick T. Harker. (1999) "How Financial Firms Decide on Technology," Chapter 3 in *Brookings/Wharton Papers on Financial Services: 1999*, Litan, Robert E. and Anthony M. Santomero, Eds. Washington, DC: Brookings Institution Press: 93-136.
59. Hitt, Lorin M. (1999). "The Impact of IT Management Practices on the Performance of Life Insurance Companies," Chapter 7 in *Changes in the Life Insurance Industry: Efficiency, Technology and Risk Management* (J. David Cummins and Anthony M. Santomero, eds.), Norwell, MA: Kluwer Academic Publishers: 211-243.

Trade Journal Publications

60. Brynjolfsson, Erik and Lorin M. Hitt (1997) "Breaking Boundaries", *InformationWeek* 500 September 22: 54-61.
61. Brynjolfsson, Erik and Lorin M. Hitt (1996) "The Customer Counts," *InformationWeek*, September 8: 38-43.
62. Brynjolfsson, Erik and Lorin M. Hitt (1995) "The Productive Keep Producing," *InformationWeek*, September 18: 38-43.

Books

63. Ferguson, Matthew, Hitt, Lorin and Prasanna Tambe. *The Talent Equation*. McGraw Hill, 2013.

Reports

64. Ahluwalia, Simran, Caulfield, Matthew, Davidson, Leah, Diehl, Mary Margaret, Ipsas, Aline, Windle, Michael and Lorin M. Hitt (2017). *The Business of Voting*. Wharton Public Policy Issue Industry Report. (<https://publicpolicy.wharton.upenn.edu/business-of-voting/>)
65. Hitt, Lorin M. and Prasanna Tambe (2011). Technical Report: The Business Case for Healthcare Information Technology in Nursing Homes. White Paper (SSRN 1964841)

66. Beard, Nick, Elo, Kinga Z., Hitt, Lorin M. and Michael G. Housman (2007). The Economics of IT and Hospital Performance. Pricewaterhouse Coopers White Paper (http://www.pwc.com/us/en/technology-innovation-center/assets/healthindex_web-x.pdf)

67. Hitt, Lorin, Wu, Lynn, Campbell, Karen, Jeafarqomi, Karim, Ashtiani, Hamid and Leslie Levesque. "Corporate Data Literacy: Scoring Firms and Firm Performance," IHS Market White Paper, September 2018.

Working Papers

68. Yapar, Ozge, Lobel, Ruben and Lorin M. Hitt (2017). "Technology Sharing in Two Sided Markets." Working Paper.

69. Jin, Fujie, Wu, Andy and Lorin Hitt (2017). "Social is the New Financial: How Startup Social Media Activity Influences Funding Outcomes," Mack Center Working Paper, Wharton School (https://mackinstitute.wharton.upenn.edu/wp-content/uploads/2017/03/FP0331_WP_Feb2017.pdf)

70. Brynjolfsson, Erik, Hitt, Lorin M. and Heekyung Hellen Kim (2011). "Strength in Numbers: how Does Data-Driven Decisionmaking Affect Firm Performance?" Working Paper (SSRN 1919486)

71. Brynjolfsson, Erik, Hitt, Lorin M., Rock, Daniel and Prasanna Tambe (2020). "IT, AI and the Growth of Intangible Capital," Working Paper (SSRN 3416290) (in revision).

72. Erol, Etiye Cansu, Hitt, Lorin M. and Prasanna Tambe (2021). "Does EMR Adoption by Nursing Homes Decrease Hospitalization Costs?" Working Paper (SSRN 3725715).

73. Hitt, Lorin M., Jin, Fujie and Lynn Wu (2016). "Data Analytics Skills and the Corporate Value of Social Media," Working Paper (SSRN 2826115) (in revision).

74. Hong, Yili, Chen, Pei-Yu, Hitt, Lorin M. and Shin-yi Wu (2020). "Measuring Product Type and Purchase Uncertainty with Online Product Ratings: A Theoretical Model and Empirical Application," Working Paper (in review).

75. Wong, Xiaoning, Wu, Lynn and Lorin M. Hitt (2021). "Can Social Media Alleviate Inequality? Evidence from Venture Capital Financing," (in review).

Academic Honors

Management Science, Information Systems Best Paper Award Finalist (2014, 2015, winner 2016)
 Information Systems Research: Best Paper Award (2013)
 Wharton Excellence in Teaching Award, Undergraduate Division (1998, 1999, 2000, 2001, 2003, 2007, 2008, 2012, 2013, 2018, 2019, 2020)
 Best Paper in Information Systems and Economics (last 7 years), Workshop on Information Systems and Economics (1999)
 Runner-up for Best Paper, International Conference on Information Systems (1999, 2004, 2012)
 David Hauck Award for Distinguished Teaching, Wharton School (1999)
 Christian R. and Mary F. Lindback Award for Distinguished Teaching, University of Pennsylvania (1998)
 National Science Foundation CAREER Program Grant Recipient (1998)
 Best Paper Award, Management Information Systems Quarterly (1996)
 International Conference on Information Systems Doctoral Consortium (1995)
 MIT Industrial Performance Center Doctoral Dissertation Fellowship (1995)
 "Best Paper" and "Best Paper Addressing the Conference Theme" Awards at the International Conference on Information Systems (1994)
 DuWayne J. Petersen Fellowship (1992-1996)
 Honorable Mention, National Science Foundation Fellowship (1989)
 Elected to Tau Beta Pi Engineering Society (1988)

Elected to Sigma Xi Scientific Research Society (1988)
Finalist, National Merit Scholarship Program (1985)
National Society of Professional Engineers' Scholarship (1985)
Honorable Mention, Westinghouse Science Talent Search (1985)

Grants

Analytics at Wharton. AI's Effect on Innovation and Productivity. (\$50K) (12/20 – 12/22).

Commonwealth Fund. The Business Case for Healthcare IT in Nursing Homes. (~\$150K) (1/08 – 12/13).

Co-Principal Investigator (with Mei Xue and Patrick Harker), National Science Foundation. Collaborative Research: Customer Efficiency and the Management of Multi-Channel Service Delivery Systems. Award: ~\$250K (8/05 – 8/07)

Wharton eBusiness Initiative/Mack Center, University of Pennsylvania, Wharton School. Product Reviews, Pricing and Market Strategy. Award: \$10K (5/05-11/05)

Fishman Davidson Center, University of Pennsylvania, Wharton School. Information Technology, Product Variety and Operations (6/2004-6/2005). Award: ~\$18K.

University Research Foundation. Information Technology and Product Variety; Data Development and Analysis. Award: \$18.5K (9/2004-5/2005)

Co-Principal Investigator (with Paul Kleindorfer and D.J. Wu), SAP America. Valuation of ERP in the Oil and Gas Industry. Award: \$40K (10/02-6/03)

Principal Investigator, NSF Grant IRI-9733877 (Computing and Social Systems Program): The Economics of Information Technology, Organization and Productivity: Theory Development and Empirical Investigation. Award: \$309K (6/98-10/04)

Principal Investigator. Customer Behavior in On-Line Markets. Wharton Electronic Commerce Forum. Award: \$25K (6/00 – 6/01).

Principal Investigator. Switching Cost and Pricing in Electronic Markets. Wharton eBusiness Initiative. Award \$25K (6/01-6/02)

Journal/Conference Reviews

Editorial Board

Information Systems Research (Guest Senior Editor, 2009-2011; Senior Editor, 2007-2008; Associate Editor 2000-2002, 2004 Guest Associate Editor)
Journal of Management Information Systems (2002-present)
Management Science (2002-2008; Departmental Co-Editor – Information Systems, 2008-2015)
SSRN Information Systems and Economics (2004-2008)

Program Committee

Workshop on Information Systems and Economics (2009 Conference Co-Chair; 2004, Conference Co-Chair)
International Conference on Information Systems (2000, 2003 Associate Editor)

ACM Conference on Electronic Commerce (2007)

International Conference on Information Systems Doctoral Consortium (2007)

NYU CeDER Summer Doctoral Workshop (2007)

Ad-hoc Reviewer

American Economic Review, Canadian Journal of Economics, Canada Social Science Research and Humanities Council, City University of Hong Kong - Grant Review Committee, Communications of the ACM, Economic Inquiry, European Economic Review, European Journal of Operations Research, Hawaii International Conference on System Sciences Industrial Relations, Industrial and Labor Relations Review, Information Economics and Policy, Information Systems Frontiers, Information Systems Research, Information Technology and Management, Journal of Banking and Finance, Journal of Industrial Economics, Journal of Law, Economics and Organization, Journal of Management Information Systems, Journal of Organizational Computing, Journal of Productivity Analysis, Management Science, Managerial and Decision Economics, Manufacturing & Service Operations Management, Marketing Science, McGraw-Hill Textbook Division, MIS Quarterly (occasional Guest Associate Editor), National Science Foundation, Review of Economics and Statistics, Regional Science, Sloan Management Review, Quarterly Journal of Economics

Teaching Experience

Massachusetts Institute of Technology, Sloan School of Management. Course: 15.567 – Introduction to eBusiness, Fall, 2001 (2 sections, co-taught with Erik Brynjolfsson)

University of Pennsylvania, The Wharton School. Course: OPIM101 – Introduction to Operations and Information Management. Fall, 2007; Fall, 2008; Fall, 2009; Fall, 2010; Fall, 2011 (Co-instructor); Fall, 2012; Fall, 2013 (x2); Fall, 2014 (x2) ; Fall, 2015 (x2) (Instructor).

University of Pennsylvania, The Wharton School. Course: OPIM105 -- Data Analysis in VBA and SQL. Spring, 2011 (Co-instructor); Spring, 2012; Spring, 2013; Fall, 2013; Fall 2015; Fall 2016 x2; Fall 2017 x2; Fall 2018 x2, Fall 2019 x2; Spring 2020.

University of Pennsylvania, The Wharton School. Course: OPIM 469 - Advanced Topics in Information Strategy and Economics. Spring, 2000 (x2); Spring, 2001 (x2); Spring, 2002 (x3) (Instructor); Spring, 2003 (Co-instructor, 2 sections); Spring, 2004; Spring, 2005; Spring, 2006; Spring, 2007; Fall, 2008; Spring, 2010; Spring, 2011; Spring, 2012; Spring, 2013, Fall 2014 (Instructor)

University of Pennsylvania, The Wharton School. OPIM669 - Advanced Topics in Information Strategy/Financial Information Systems. Spring, 1998; Spring, 1999; Spring, 2000; Spring, 2001; Spring, 2002 (Guest Lecturer); Spring, 2003 (Co-instructor); Spring, 2004; Spring, 2005; Spring, 2006; Spring, 2007 (Instructor).

University of Pennsylvania, The Wharton School. Tiger Team Field Application Project. Spring, 1999; Spring, 2000; Spring, 2001 (Faculty Advisor for Electronic Commerce/IT projects)

University of Pennsylvania, The Wharton School. Course: EMTM900 – Electronic Commerce Marketing. Spring, 2000 (Guest Lecturer)

University of Pennsylvania, The Wharton School. Course: D-SEM on Electronic Commerce. Fall, 2000

University of Pennsylvania, The Wharton School. Course: OPIM 319 - Advanced Topics in Information Strategy/Advanced Decision Support Systems (now OPIM469). Spring, 1998; Spring, 1999 (Instructor)

University of Pennsylvania, The Wharton School. Course: OPIM 210 - Management Information Systems. Fall, 1996; Spring, 1997; Fall, 1997; Spring, 1998; Spring 1999 (x2); Fall, 2002 (x2); Spring, 2004; Spring, 2006; Fall, 2006; Spring, 2007; Fall, 2007 (Instructor).

University of Pennsylvania, The Wharton School. MBA Pre-Term Exercise on Contract Negotiations for Information Technology Outsourcing. Fall, 1998; Fall, 1999 (with D. Croson and R. Croson)

University of Pennsylvania, The Wharton School. Course: OPIM 950/955/960/961 - Doctoral Seminar in Information Technology: Economics and Organization. Fall, 1997; Fall, 2000 w/ R. Aron as OPIM899; Fall, 2001 (Guest Lecturer); Fall, 2003 (Guest Lecturer); Spring, 2003; Fall, 2004 (Guest Lecturer); Spring, 2005; Spring, 2008; Spring, 2010; Spring, 2012; Spring 2013 (co-Instructor); Spring, 2015; Spring 2016; Spring 2017; Spring 2018; Spring 2019.

University of Pennsylvania, The Wharton School. Course: WH101 – Business and You. Spring, 2017, Fall 2017, Fall 2018, Fall 2019. (cotaught OIDD Session).

University of Pennsylvania, The Wharton School. Course: OPIM 666 - Information: Industry Structure and Competitive Strategy. Winter Quarter, 1997; Spring Quarter, 1997 (Instructor); Guest Lecturer (Fall Quarter, 1999; Fall Quarter, 2000).

Massachusetts Institute of Technology, Sloan School of Management. Course: 15.566 - Information Technology as an Integrating Force in Manufacturing. Spring, 1995 (Teaching Assistant)

Brown University, Department of Engineering. Course: EN 162- Analog Circuit Design. Spring, 1987 (Teaching Assistant)

Professional Affiliations

Sigma Xi, Tau Beta Pi, Association for Computing Machinery, American Economic Association, INFORMS, Association for Information Systems

Students Supervised

Dissertation Supervisor

Eli Snir (2001): Lecturer, Washington University
Pei-Yu (Sharon) Chen (2002): Professor, Arizona State University
Guodong (Gordon) Gao (2005): Associate Professor, University of Maryland
Xinxin (Mandy) Li (2005): Associate Professor, University of Connecticut
Prasanna (Sonny) Tambe (2008): Associate Professor, Wharton School
Fujie Jin (2016): Assistant Professor, Indiana University

Thesis Reader

Bin Gu (2002): Professor, Arizona State University
Il-Horn Hann (2000): Professor, University of Maryland

Michael Jacobides (2000): Professor, London Business School
 Jeff McCullough (2005): Assistant Professor, University of Minnesota
 Ying Liu (2006): Assistant Professor, University of Hawaii
 Ben Powell (2003): Unknown
 Michael Row (2001): Private Industry
 Baba Prasad (2003): Unknown
 Mei Xue (2001): Associate Professor, Boston College
 Matt Thatcher (1999): Assistant Professor, University of Nevada (Las Vegas)
 Shinyi Wu (2003): Assistant Professor, Arizona State University
 Moti Levi (2001): Private Industry
 Antonio (Toni) Moreno-Garcia (2012): Assistant Professor, Northwestern University
 Sergeui Roumanitsev (2006): Private Industry
 Marcelo Olivares (2007): Associate Professor, Columbia University
 Ben Shiller (2011): Assistant Professor, Brandeis University
 Adam Saunders (2011): Assistant Professor, University of British Columbia
 Fangyun (Tom) Tan (2011): Assistant Professor, Southern Methodist University
 Vihbahshu Abhishek (2011): Assistant Professor, Carnegie Mellon University
 Hessam Bavafa (2013): Assistant Professor, University of Wisconsin
 Yili (Kevin) Hong (2013): Assistant Professor, Arizona State University
 Dokyun Lee (2014): Assistant Professor, Carnegie Mellon University
 Jing Peng (2015): Assistant Professor, University of Connecticut
 Bowen Lou (2019): On academic job market

Other Doctoral Advising

Fujie Jin (2013): Summer Paper Advisor, Primary Academic Advisor
 Amanda Jensen (2010): Summer Paper Advisor
 Felipe Csaszar (2005): Academic Advisor
 Ozge Yasar (2015-6): Independent study supervisor
 Kayoung Choi (2015): Summer Paper Advisor
 Atiye Cansu Erol (2019): Summer Paper Advisor

Masters Students

Xiaoge Zhou, OPIM Department, Wharton School (1999-2001): Thesis Supervisor
 Jihae Wee, School of Engineering and Applied Science (2003): Project Supervisor
 Zhu Lu, College of Arts and Sciences (2014): Thesis Supervisor

MBA Students

Anna Blacyzyck, Wharton School (2004): Independent Study Project Supervisor
 Luca Coltro, Wharton School (1997-1998): Advanced Study Project Supervisor
 Andrew Trader, Wharton School (1999): Advanced Study Project Supervisor

Undergraduate Students

Steven Altman, Wharton School (1997): Independent Study Project Supervisor
 Maury Apple, Wharton School (1997): Independent Study Project Supervisor
 Tara Bhandari, Wharton School (2002): Society Project Supervisor
 Thomas Burrell, Engineering School (2001): Senior Project Supervisor
 Todd Bishop, Wharton School (1999): Independent Study Project Supervisor
 Rachel Boim, Wharton School (1999): Independent Study Project Supervisor
 Hope Bromley, Wharton School (2000): Independent Study Project Supervisor
 John Chiang, Wharton School (2001): Society Project Supervisor
 Charlene Chen, Wharton School (2005): Senior Design Project Supervisor

Robert Dolan, Wharton School (2003-4): Wharton Research Scholars Supervisor
 Ronak Ghandhi, School of Engineering (2013): Senior Design Project Supervisor
 Gabriel Gottlieb, School of Engineering (2002): Senior Design Project Supervisor
 Phuong Ho, Department of Economics (1998): Honors Advisor
 Richard Hooper, Systems Engineering (1999): Independent Study Project Advisor
 Hunter Horsley, Wharton School (2015): Independent Study Project Advisor
 Melinda Hu, Wharton School (2018-2019): Wharton Research Scholars Advisor
 Pawel Hytry, Wharton School (2011-2012): Independent Study Project Advisor
 Ulhas Jagdale, School of Engineering (2013): Senior Design Project Supervisor
 Johnny Kong, Wharton School (2005): Senior Design Project Supervisor
 Amin Laksmani, Computer Science and Engineering (2010): Senior Design Supervisor
 Henrique Laurino, Wharton School (2018): Senior Thesis Supervisor
 Jacob Lefkowitz, Wharton School (1998): Society Project Supervisor
 Steven Levick, Wharton School (2012): Independent Study Supervisor
 Brandon Newberg, Wharton School (2012): Independent Study Supervisor
 David Perez y Perez, Wharton School (1999): Independent Study Supervisor
 Nickhil Ramchandi, Wharton School (1999): Independent Study Supervisor
 Reuben Randolph, School of Engineering (1998): Project Supervisor
 Kevin Reeves, School of Engineering (2001): Independent Study Project Supervisor
 Allison Rosen, Wharton School (1997): Independent Study Project Supervisor
 Jennifer Seo, School of Engineering (2000): Senior Design Project Supervisor
 Kyle Smith, Wharton School (2001): Independent Study Project Supervisor
 David Thornton, Wharton School (2005): Senior Design Project Supervisor
 Jon Turow, Wharton School (2005-6): Independent Study Supervisor
 Udack Victor, School of Engineering (2000): Senior Design Project Supervisor
 Jason Wang, Wharton School (1998): Society Project Supervisor
 Melinda Wang, Wharton School (2018): Senior Project Supervisor
 Christine Wong, Wharton School (1997): Society Project Supervisor

Other Service

University of Pennsylvania

Academic Dishonesty Disciplinary Committee Panel (2012)
 Trustees Committee on Academic Policy (2009-2010)
 Lindback Teaching Award Committee (1999)

Wharton School

Curriculum Innovation and Review Committee (CIRC) (chair, 2016-20)
 Undergraduate Curriculum Evaluation Committee (2014-2016)
 Management Department Q-Review Committee, Chair (2013-2014)
 Wharton Personnel Committee (2009-2011)
 Dean's Advisory Group (2008)
 Panel Moderator, Wharton Asia Business Forum (2006)
 Undergraduate Curriculum Design Committee (2003)
 Ph.D Program Review Committee (2000)
 Dean's Council on Education (2001)
 WebI Curriculum Development Committee (2000)

Wharton School, Undergraduate Division

Moderator, Wharton Information Technology Career Panel (1997-99)
 Graduation Speaker (1999)
 Parents Weekend Speaker (1999)
 Hauck Teaching Award Committee (2000-01)

Electronic Commerce Concentration Advisor (2000-present)
Wharton/Monitor Corporation Undergraduate Case Competition Judge (2001)
Deans Award for Excellence Committee (2010, 2006)

Wharton School, Department of Operations and Information Management/OIDD

Recruiting Committee (2005, 2006, 2011, 2014, 2016)
Doctoral Admissions Committee (2004, 2005, 2011, 2012-13, 2015-7)
Department Q-Review Committee (1999-00)
Undergraduate Coordinator (1998-01, 2002-2008)
Undergraduate Curriculum Committee (1998-01, 2002-2008)
Department Computing Coordinator (1997)
Department Representative to Wharton Computing (1997)
Department Seminar Coordinator (1996, 2010)
Departmental Tenure Committees (2006, 2013, 2014, 2019)

Wharton School, Public Policy Initiative

Wharton/OSET Foundation Project on the Voting Technology Industry (2016)

Morgan State University

Advising on Curriculum Design (2019).

MIT Center for Coordination Science

Seminar Coordinator (1994)

National Science Foundation

Panelist (1998, 2001, 2003, 2005, 2006, 2015)

Participant in the NSF CISE/SBE Cyberinfrastructure Workshop (2005)

International Conference on Information Systems

Doctoral Consortium Faculty (2006)

Other

MIT Inclusive Innovation Competition Judge (2016)

NYU/CeDER Summer Doctoral Consortium Faculty (2006)